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International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7 : H05B 41/00 — A2

(11) International Publication Number: **WO 00/35252**

(43) International Publication Date: 15 June 2000 (15.06.00)

(21) International Application Number: PCT/IB99/02087

(22) International Filing Date: 7 December 1999 (07.12.99)

(30) Priority Data:

60/111,296	7 December 1998 (07.12.98)	US
60/111,235	7 December 1998 (07.12.98)	US
60/111,302	7 December 1998 (07.12.98)	US
60/111,322	7 December 1998 (07.12.98)	US
60/111,216	7 December 1998 (07.12.98)	US

(81) Designated States: CN, IN, JP, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published
Without international search report and to be republished upon receipt of that report.

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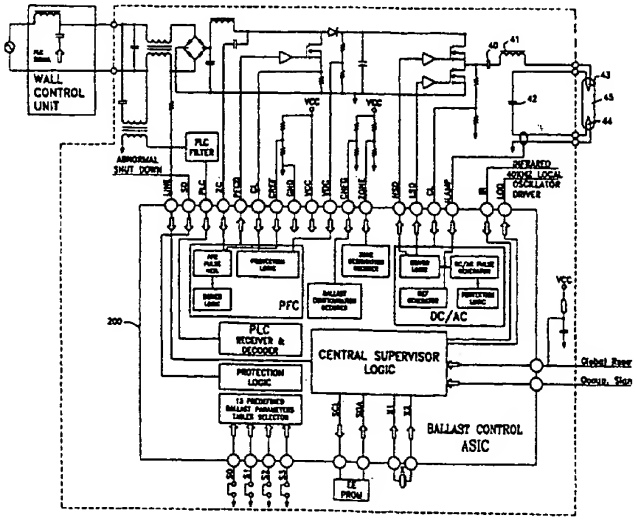
(54) Title: DIGITAL POWER CONTROLLER



(57) Abstract

A power controller for fluorescent lamp dimming is disclosed, using all digital internal and external programmable controls. A specific ASIC is described. A gate array and microcomputer share parallel functions with fast sub–functions carried out by the gate array and slower sub–functions carried out by a micro–processor. Circuits are provided for automatic shut down when a high frequency ground fault is detected; for connecting the filaments of gas discharge lamps in a series/parallel circuit; for driving the load as close to resonance as possible but in an inductive mode; and for developing a dead time between high side and low side switches which is related to transformer current, switch current, bridge voltage or bridge voltage dv/dt.